EXHIBIT B

United States Patent **6,787,640**
Greene , et al. **September 7, 2004**

Fibroblast growth factor 14

Abstract

Disclosed is a human Fibroblast growth factor-14 polypeptide and DNA(RNA) encoding such polypeptide. Also provided is a procedure for producing such polypeptide by recombinant techniques. Also disclosed are methods for utilizing such polypeptide for promoting wound healing for example as a result of burns and ulcers, to prevent neuronal damage due to associated with stroke and promote neuronal growth, and to prevent skin aging and hair loss, to stimulate angiogenesis, mesodermal induction in early embryos and limb regeneration. Antagonists against such polypeptides and their use as a therapeutic to prevent abnormal cellular proliferation, hyper-vascular diseases and epithelial lens cell proliferation are also disclosed. Diagnostic methods for detecting mutations in the coding sequence and alterations in the concentration of the polypeptides in a sample derived from a host are also disclosed.

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Claims

What is claimed is:

1. An isolated ***nucleic acid*** molecule comprising a ***nucleic acid*** sequence encoding at least 30 contiguous amino acids of SEQ ID NO:2.

2. The isolated ***nucleic acid*** molecule of claim 1, wherein said ***nucleic acid*** sequence encodes at least 50 contiguous amino acids of SEQ ID NO:2.

3. The isolated ***nucleic acid*** molecule of claim 1 further comprising a heterologous polynucleotide.

4. The isolated ***nucleic acid*** molecule of claim 3, wherein the heterologous polynucleotide encodes a heterologous polypeptide.

5. A recombinant vector comprising the ***nucleic acid*** molecule of claim 1.

6. An isolated recombinant host cell comprising the ***nucleic acid*** molecule of 1, wherein said ***nucleic acid*** molecule is operatively associated with a heterologous regulatory sequence.

7. A method of producing a polypeptide comprising:

(a) culturing the recombinant host cell of claim 6, under conditions which cause the encoded polypeptide to be expressed: and

(b) recovering said polypeptide.

8. An isolated ***nucleic acid*** molecule comprising a polynucleotide selected from the group consisting of:

(a) a polynucleotide encoding amino acid residues -26 to 199 of SEQ ID NO:2:

(b) a polynucleotide encoding amino acid residues 1 to 199 of SEQ ID NO:2; and

(c) a polynucleotide complementary to any of the ***nucleic acid*** sequences in (a) or (b) above.

9. The isolated ***nucleic acid*** molecule of claim 8 wherein said polynucleotide is (a).

10. The isolated ***nucleic acid*** molecule of claim 8 wherein said polynucleotide is (b).

11. The isolated ***nucleic acid*** molecule of claim 8 wherein said polynucleotide is (c).

12. The isolated ***nucleic acid*** molecule of claim 8 wherein the polynucleotide further comprises a heterologous polynucleotide.

13. The isolated ***nucleic acid*** molecule of claim 12 wherein the heterologous polynucleotide encodes a heterologous polypeptide.

14. A method for making an isolated recombinant vector comprising inserting the isolated ***nucleic acid*** molecule of claim 8 into a vector.

15. An isolated recombinant vector comprising the isolated ***nucleic acid*** molecule of claim 8.

16. The isolated recombinant vector of claim 15 wherein the ***nucleic acid*** molecule is operably associated with a heterologous regulatory sequence that controls gene expression.

17. An isolated recombinant host cell comprising the isolated ***nucleic acid*** molecule of claim 8.

18. The isolated recombinant host cell of claim 17 wherein the ***nucleic acid*** molecule is operably associated with a heterologous regulatory sequence that controls gene expression.

19. A method for making an isolated recombinant host cell comprising inserting the isolated ***nucleic acid*** molecule of claim 8 into an isolated host cell.

20. A method for producing a protein, comprising:

(a) culturing an isolated recombinant host cell under conditions suitable to produce a polypeptide encoded by the isolated ***nucleic acid*** molecule of claim 8; and

(b) recovering the protein from the cell culture.

21. A composition comprising the isolated ***nucleic acid*** molecule of claim 8 and a pharmaceutically acceptable carrier.

22. An isolated ***nucleic acid*** molecule comprising a polynucleotide selected from the group consisting of:

(a) a polynucleotide encoding the full-length polypeptide comprising the amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. PTA-974;

(b) a polynucleotide encoding the mature polypeptide comprising the amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. PTA-974 and

(c) a polynucleotide complementary to any of the ***nucleic acid*** sequences in (a) or (b) above.

23. The isolated ***nucleic acid*** molecule of claim 22 wherein said polynucleotide is (a).

24. The isolated ***nucleic acid*** molecule of claim 22 wherein said polynucleotide is (b).

25. The isolated ***nucleic acid*** molecule of claim 22 wherein said polynucleotide is (c).

26. The isolated ***nucleic acid*** molecule of claim 22 wherein the polynucleotide further comprises a heterologous polynucleotide.

27. The isolated ***nucleic acid*** molecule of claim 26 wherein the heterologous polynucleotide encodes a heterologous polypeptide.

28. A method for making an isolated recombinant vector comprising inserting the isolated ***nucleic acid*** molecule of claim 22 into a vector.

29. An isolated recombinant vector comprising the isolated ***nucleic acid*** molecule of claim 22.

30. The isolated recombinant vector of claim 29 wherein the ***nucleic acid*** molecule is operably associated with a heterologous regulatory sequence that controls gene expression.

31. An isolated recombinant host cell comprising the isolated ***nucleic acid*** molecule of claim 22.

32. The isolated recombinant host cell of claim 31 wherein the ***nucleic acid*** molecule is operably associated with a heterologous regulatory sequence that controls gene expression.

33. A method for making an isolated recombinant host cell comprising inserting the isolated ***nucleic acid*** molecule of claim 22 into an isolated host cell.

34. A method for producing a protein, comprising:

a) culturing an isolated recombinant host cell under conditions suitable to produce a polypeptide encoded by the ***nucleic acid*** molecule of claim 22; and

(b) recovering the protein from the cell culture.

35. A composition comprising the ***nucleic acid*** molecule of claim 22 and a pharmaceutically acceptable